

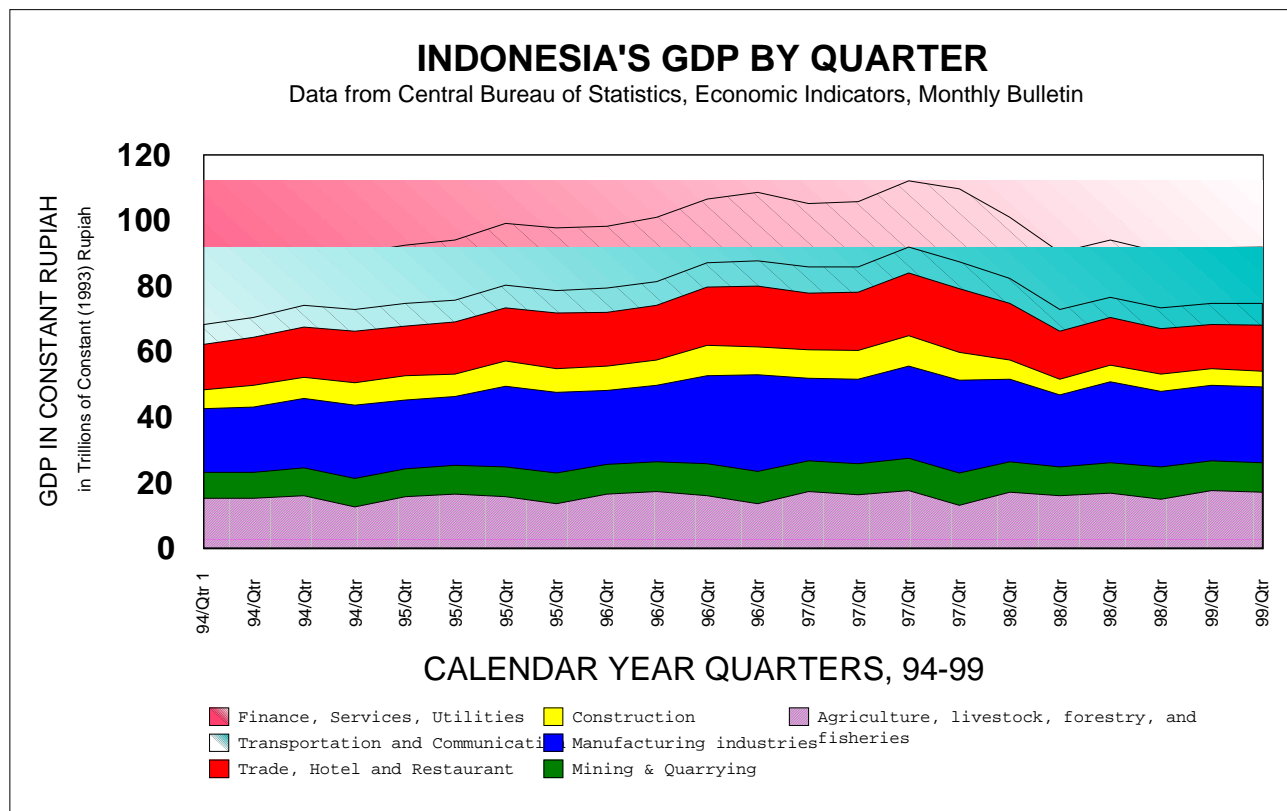
NATURAL RESOURCE IMPACTS OF INDONESIA'S FINANCIAL CRISIS

August 12, 1999

(Some Key Points from a Study Commissioned by Deputy V of BAPPENAS;
with updates through the second quarter of 1999)

MAIN RESULTS OF STUDY

- * Indonesia's crisis has had highly variable impacts across provinces and sectors
- * Overall economic activity declined by about 15 percent in 1998, but is recovering somewhat in early 1999 (very preliminary figures)
- * Recession is deep and widespread, despite some pockets of some success
- * Disparities will increase between resource-rich provinces and others (eastern)
- * Imbalances in economic activity will impede recovery and growth
- * Initial gains in export-oriented sectors from Rupiah devaluation in 1998 have mostly been eroded due to inflation and (slightly) stronger Rupiah in 1999.



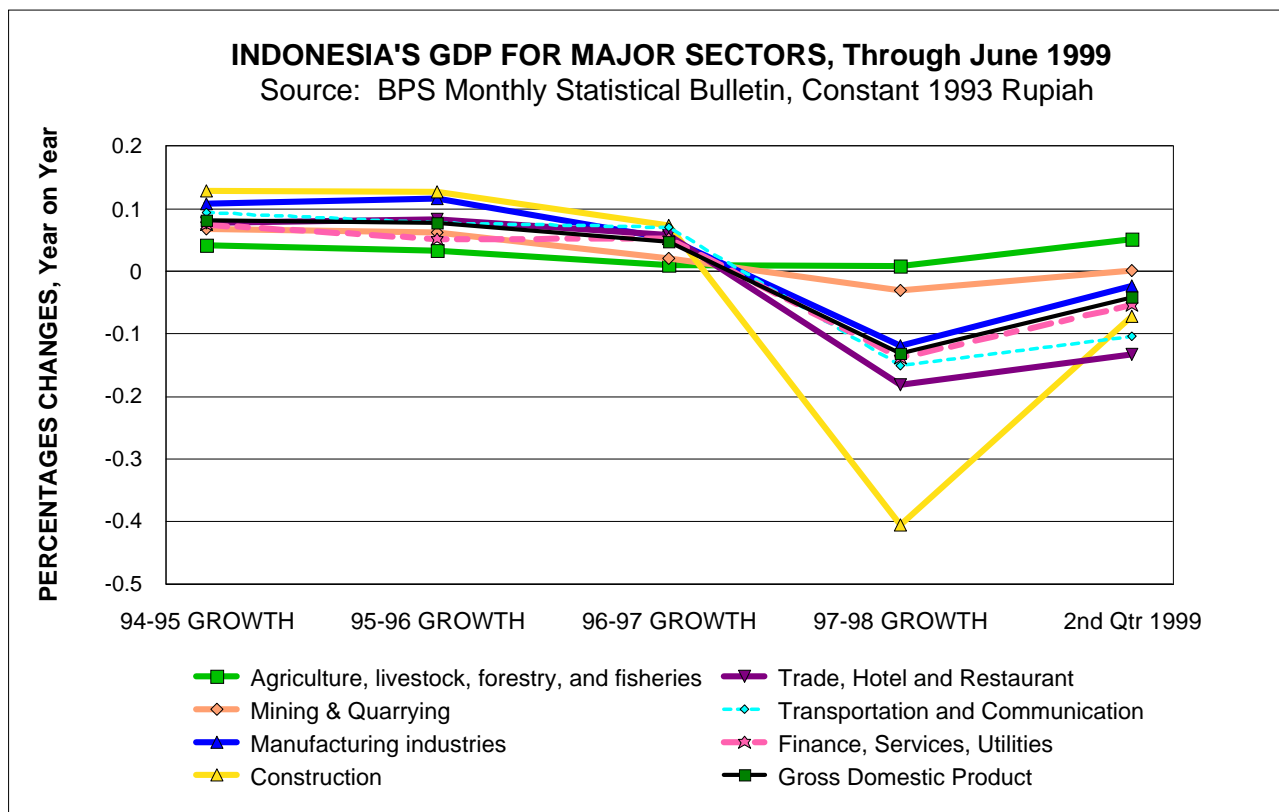
NATURAL RESOURCE IMPACTS IDENTIFIED

- * Natural resource sectors have maintained some growth, or at least stability
- * Forestry earnings and logging were increasing in 1998, but may be lower in 1999
- * "Plantation crops" subsector grew rapidly, gaining from Rp devaluation
- * "Fisheries" earnings also rose, indicating pressure on coastal resources
- * Pressure on forest and land resources continued to increase over a 5 year trend
- * Forest (land) conversion is increasing annually.

Although economic crisis increased activity in resource sectors, some would say that the true "crisis" in Indonesia's natural resource management has been the long term trend of increasing extraction.

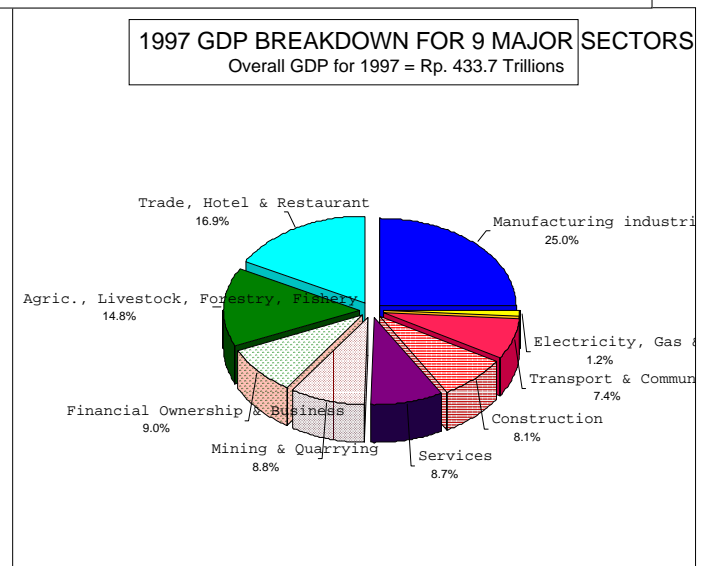
SECTORAL ANALYSIS

- * Indonesia's financial crisis has highly variable impacts across economic sectors
- * After 1997, most sectors were in steep decline
- * Construction, financial services, and trade/hotels dropped 20 to 40 % in 1998
- * Manufacturing (about a quarter of economic activity) declined by 15 percent
- * Natural resource sectors (green) stand out as maintaining some growth
- * Mining value added is down by about 5 percent in the post crisis period



In early 1999 (very preliminary figures), growth rates in many sectors have returned to near zero (from negative values in 1998).

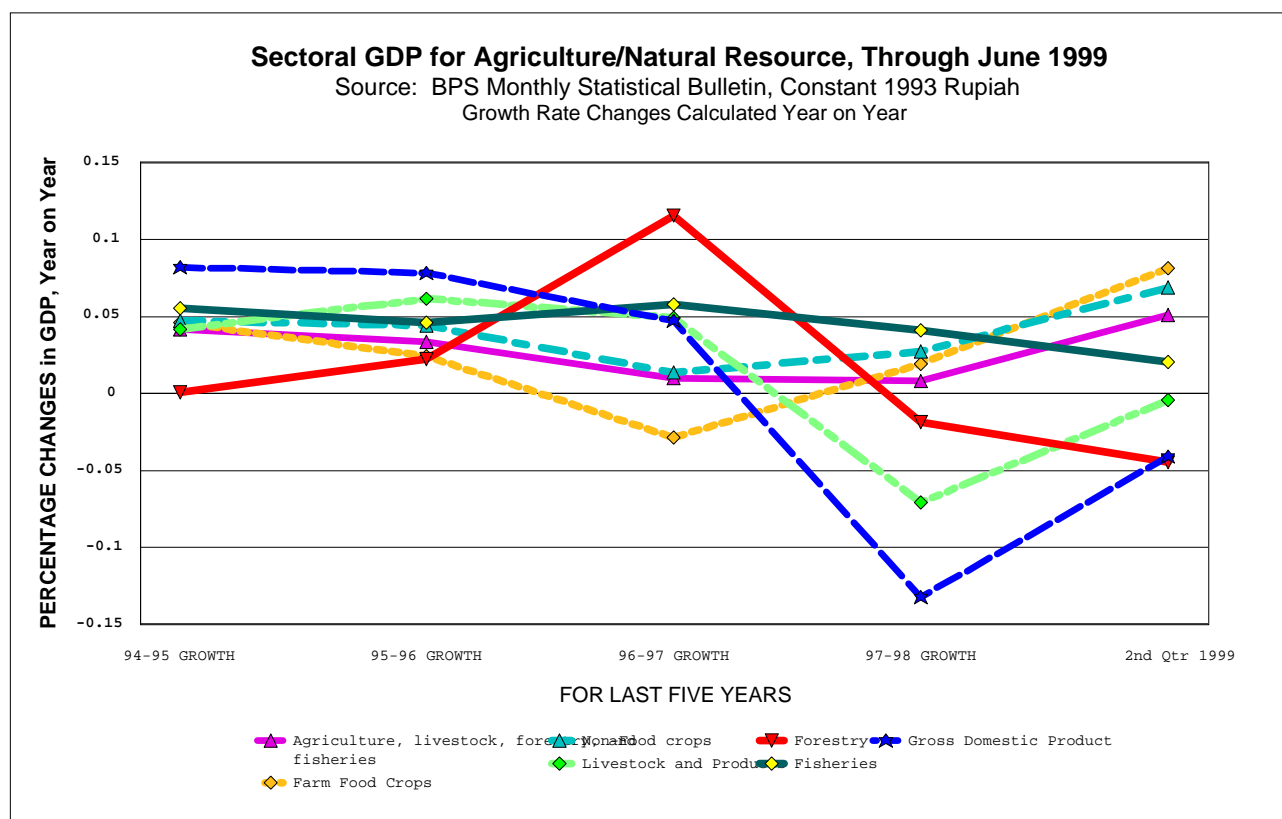
This may be misleading, because the comparison is to the very low levels of 1998, not long term averages.



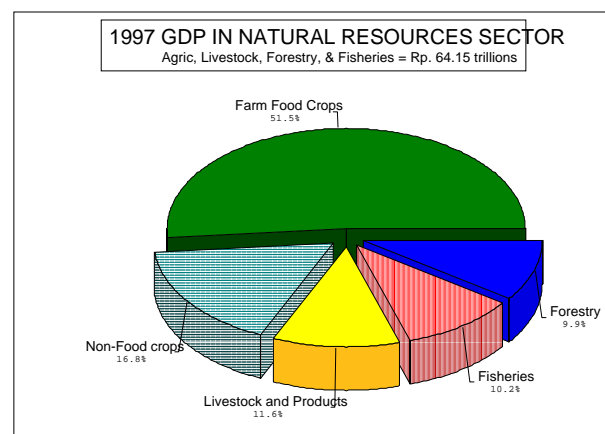
NATURAL RESOURCE SECTORS

Relative to the rest of the economy, agriculture and natural resource sub-sectors have maintained some growth, or at least stability, during the period of crisis.

- * Five main subsectors: food crops, non-food crops, livestock, fisheries, & forestry
- * The non-food crops subsector is growing rapidly (up over 7% since 1997), and includes coconut (copra), oil palm, coffee, tea, cocoa, etc.
- * Fisheries subsector has been growing since 1997, though at a slowing rate.
- * The value of Forestry was up by more than 12 percent in 1998, but later declined in more recent quarters.



- * All export commodity sectors benefitted from the Rp. devaluation in 1998
- * But these gains have mostly been eroded by cumulative inflation and the strengthening Rupiah in 1999.



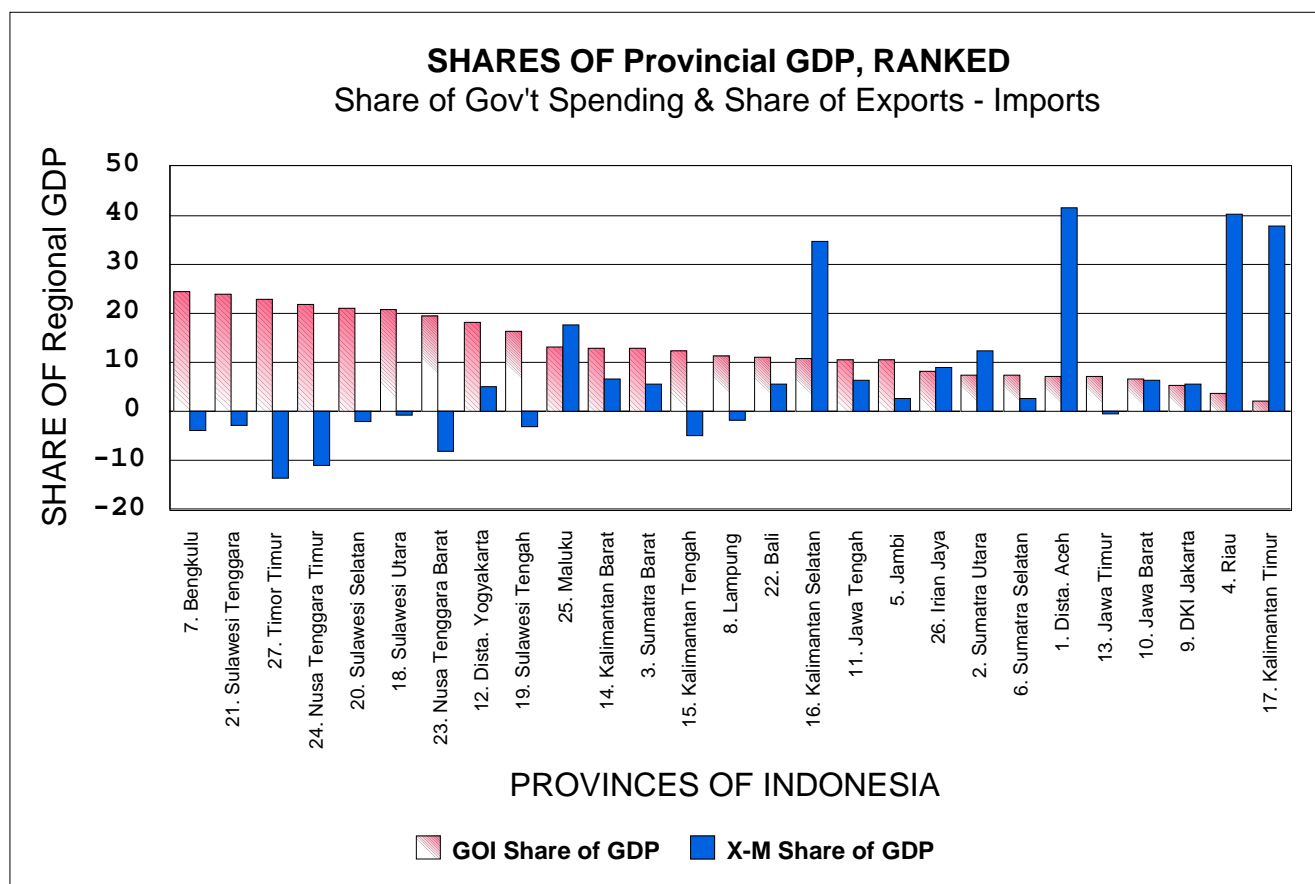
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PROVINCIAL ANALYSIS

The crisis has highly variable impacts across Indonesia's provinces. Much has been written about the social, employment, and poverty impacts of the crisis. This study did not focus on these issues.

However, one illustration highlights an important trend at the provincial level:

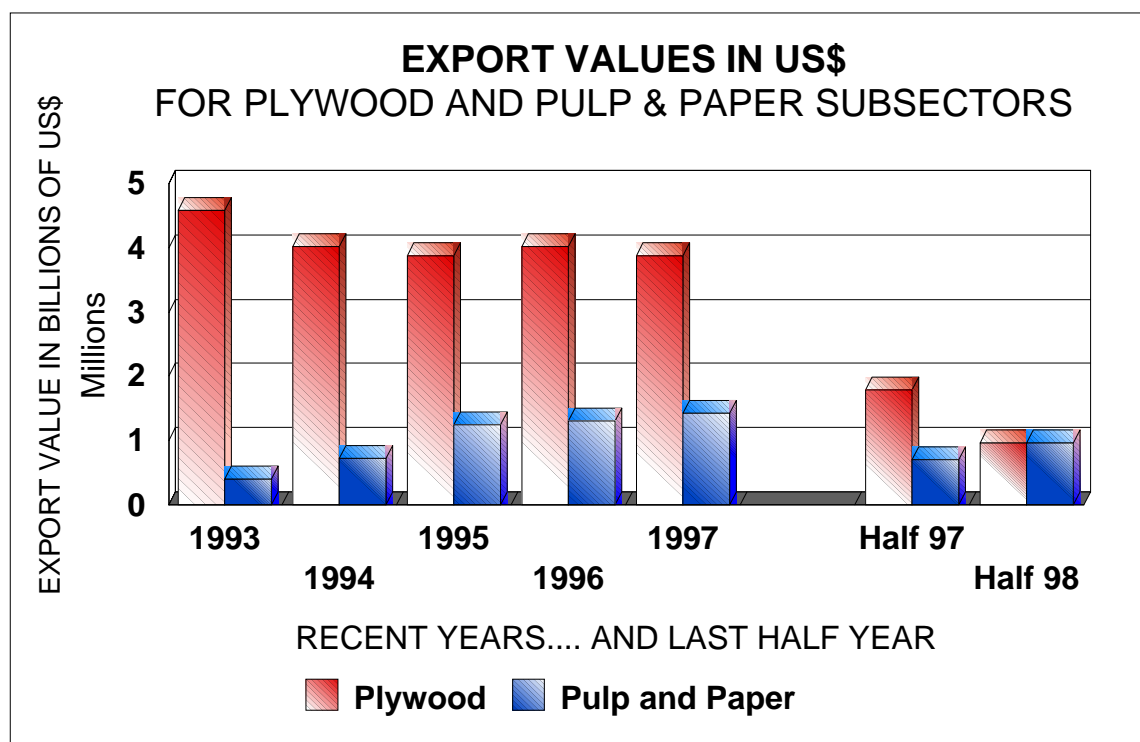
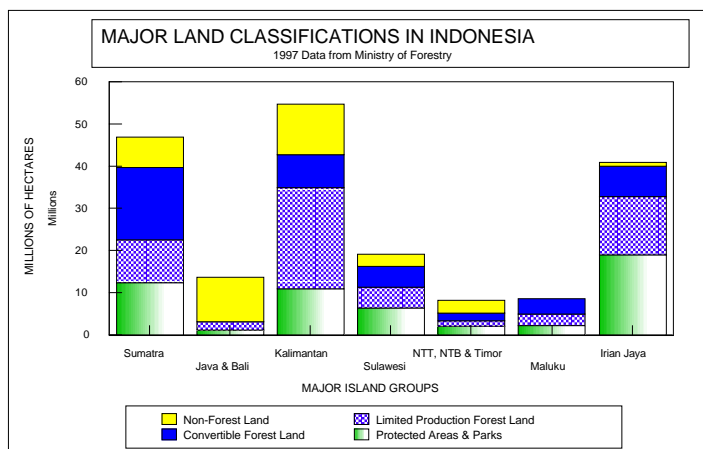
- * Export rich provinces are the resource rich islands of the West
- * Government spending makes up a larger share of activity and budgets in the poorer eastern provinces
- * Since resource exporters are earning more in rupiah due to devaluation
- * And government has fewer resources to maintain development spending
- * The crisis tends to make the rich provinces richer and the poor poorer.



FORESTRY AND WOOD PROCESSING SECTOR

Management of Forest Land continues to be a high priority in the post crisis period, because financial pressure for log extraction is increasing. However, these figures have not yet been updated through 1998 and early 1999.

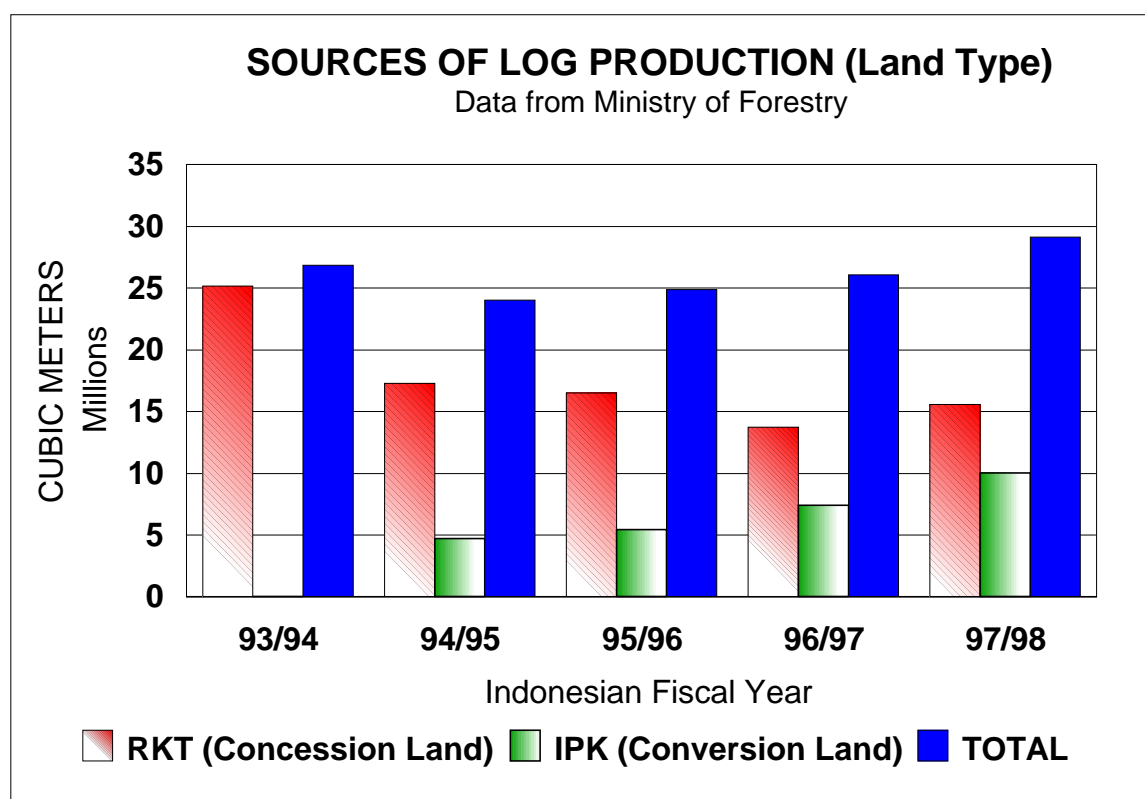
- * Most land in Indonesia is administered by the Ministry of Forestry and Estate Crops, as much as 80% to 90% for some provinces.
- * Export values for plywood and sawn timber were down in dollar terms, following a five year trend – but increasing in rupiah terms due to devaluation. So the incentive to extract remained.
- * The Pulp and paper subsector was a major exception, exports were up in dollar terms in the post crisis period during 1998.
- * Activity in the subsector has increased by about 30 percent per year, doubling in value since 1993.



FORESTRY AND WOOD PROCESSING

The physical pressure on forest resources -- log extraction -- is also increasing in the post crisis period. This discussion covers the period only to mid 1998.

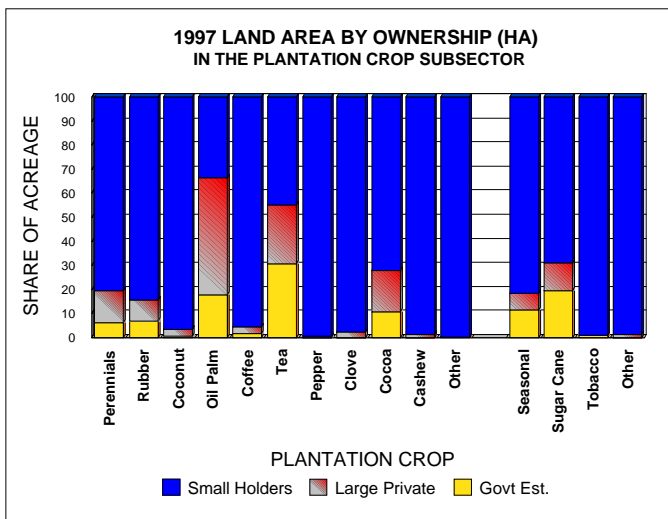
- * Total log extraction is increasing since 1994 at about 5% per year.
- * In 97/98, log extraction is up by about 10 % (more than 3 million cubic meters)
- * Much of the increase in log extraction comes from pulp and paper expansion
- * Wood use in this industry segment is increasing at about 21% per year
- * Since 1994/95 log extraction in this segment has doubled
- * In contrast, Log extraction from concessions (mainly for solid wood products, not pulp) has been on a flat or downward trend



PLANTATION CROPS AND LAND USE

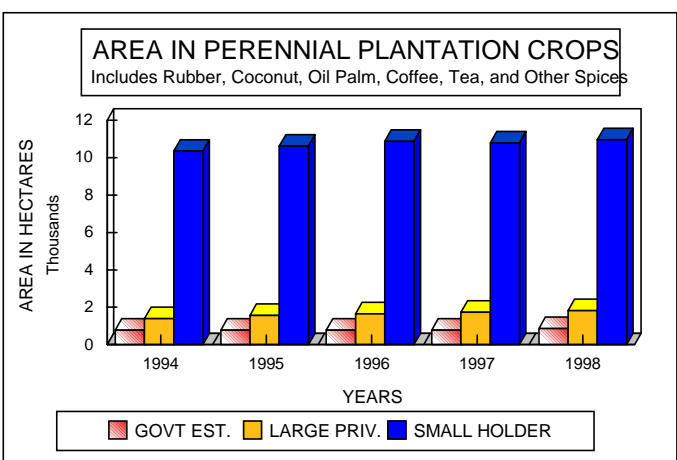
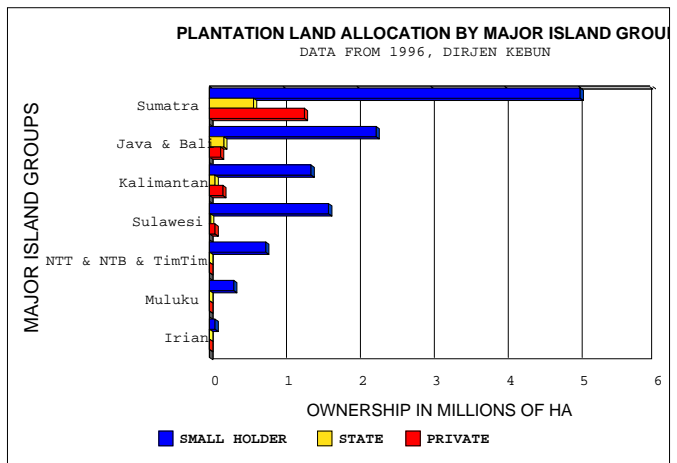
The plantation sector (non-food crops) is an important area of stability and growth in the post-crisis period.

- * Land allocated to this sector is mainly in the hands of small holders for all crops
- * Small holders represent more than 70 percent of land in plantation crops in all major island groups
- * Small holders dominate land area and production in all crops except oil palm and tea
- * Large holders produce more per unit area than small holders in most cases.



A large part of the population (half or more) is engaged in plantation crop agriculture.

- * Access to land for food crop agriculture and cash plantation crops forms an important element of the social safety net.
- * Small holder production and land use have remained relatively constant over time
- * Large private estates have been growing slowly as a share of overall production and land use
- * Oil palm is the crop showing the most growth over time
- * Other crops are relatively flat over time in production and land allocation.



PROTECTED AREAS

The economic crisis has resulted in increased pressure on parks and protected areas.

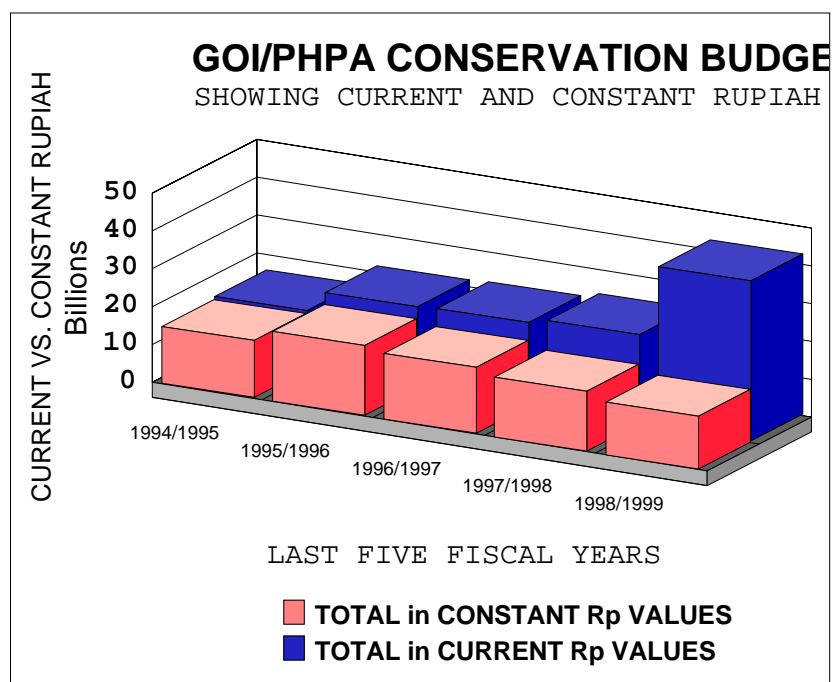
REPORTS FROM USAID/NRM-ASSISTED PARKS

- * Increased land clearing to grow export commodities like cocoa and coffee, in Lore Lindu National Park, Central Sulawesi
- * Increased illegal logging activities to meet local market demands for wood, in Kutai NP, E. Kalimantan, and Lore Lindu NP, C. Sulawesi
- * Increased fishing to meet demand of export-oriented live fish trade, in Bunaken National Park, North Sulawesi
- * Increased pressure by mining companies to obtain exploration/mining rights in mineral-rich protected areas, e.g., Kutai NP, E. Kalimantan
- * Reduced government funding has resulted in reduced enforcement and patrolling, as reported from all national parks

RESULTS FROM NRM-PHPA CONSERVATION FINANCE DATABASE

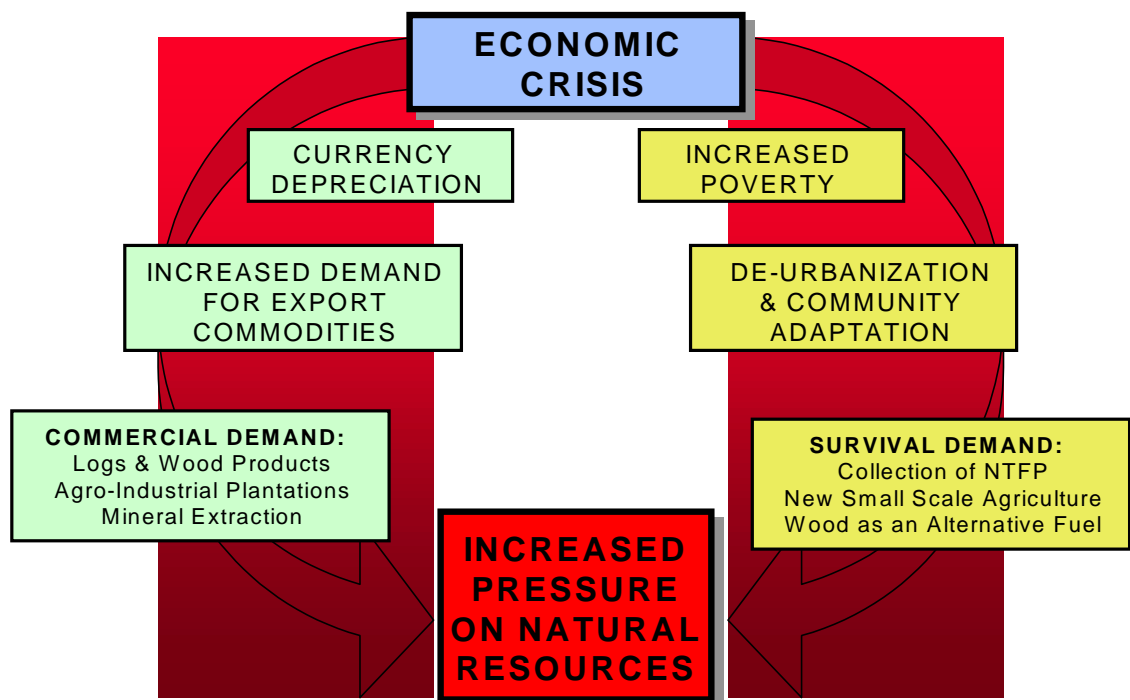
Budgetary aspects of the crisis are another important factor in natural resource protection.

- * Real spending (constant 1993 rupiah) on protected areas management is declining, just when threats are increasing.
- * Real purchasing power (pink/light) is eroded by inflation and represents fewer resources for conservation than even five years ago.



SUMMARY OF ISSUES RAISED BY THE ANALYSIS

- * Agriculture/plantation sector growth could help with recovery, but is dominated by small holders with poor access to land, credit, management skills, markets, and little tenure security.
- * Crisis is increasing both economic and political uncertainty. May result in short run management approaches -- more environmentally harmful resource management practices.
- * Decentralization: Economics will push political process of decentralization of control of resource earnings.
- * Concentration: Urban poor and working classes will be hardest hit by the crisis. Raises concerns about distribution of resources and increasing equity.



OPPORTUNITIES COMING FROM CRISIS

- * Plantation Crops managed by small holders contribute to social safety net
- * Chance to advance and reform policies to export-oriented agricultural subsectors
- * Chance to stabilize land tenure and consider land reallocation and reform.
- * Opportunity to combine land reform, safety net, and conservation measures
- * Opportunity to restructure forest-based industry toward outcome based management, greater efficiency